Computer
Museum

300 Congress Street
Boston, MA 02210

(617) 426-2800

March 13th, 1991

Mr. Michael Naimark
216 Filbert Street
San Francisco, CA 94133

Dear Mike:

Here is our proposal for Reality On Wheels: Worlds Built With Computers. As we discussed at the Advisory Group Meeting last fall, The Museum should do this project because there is no substitute for the *experi*ence of virtual reality. I feel we share a common interest in giving people from a wide range of ages and backgrounds *access* to this remarkable technology.

I am very interested in hearing your comments about the proposal. Specifically, I'm interested in hearing how you envision being involved in *Reality Check*, the section involving interactive videodiscs.

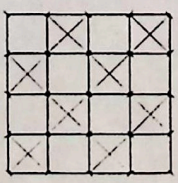
Presently, we are in the fundraising stage of the project. We would greatly appreciate any help in suggesting individual and corporate sponsors for the exhibition. I will be in touch with you in the following weeks, and look forward to hearing your feedback about the project.

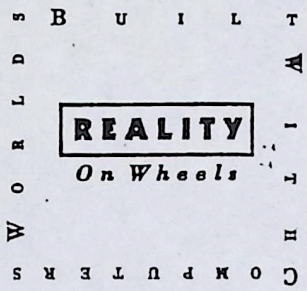
Sincerely,

Dr. Oliver Strimpel
Executive Director

Enclosure

cc: David Greschler





Executive Summary

Virtual reality is a new medium of communication, providing access to information by using pioneering techniques that are closely coupled to the ways humans intuitively operate in their surroundings. The Computer Museum is developing a unique traveling exhibition on this remarkable new technology, entitled Reality On Wheels: Worlds Built With Computers, to give people across the country the opportunity to experience these new advances in human-computer communication. While many people have heard of virtual reality, there is no substitute for the *experience* of being inside simulated environments. This exhibition will give visitors of all ages and backgrounds direct access to this exciting technology so that they hear, see, and feel virtual reality for themselves.

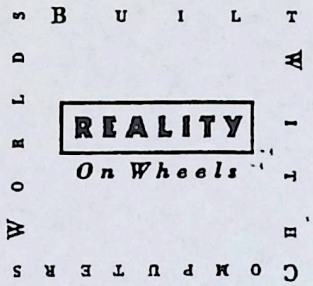
Reality On Wheels: Worlds Built With Computers will consist of three sections presenting different aspects of virtual reality:

- *The Immersion Theater* - A multimedia presentation illustrating the background and components of virtual reality.
- *Islands Of Experience* - A showcase of the different technologies presently used to create virtual reality.
- *Reality Check* - A series of interactive videodiscs that raise issues related to the implications and challenges this new technology presents.

Reality On Wheels: Worlds Built With Computers will open for six months at The Computer Museum in the spring of 1992, where staff and outside experts will evaluate and refine the exhibition before travels. While touring the country, beginning in the fall of 1992, the exhibit will be self-contained in an expandable trailer, visiting new sites every two weeks, including science centers and art museums. The exhibition is expected to travel for two years, with an estimated 80,000 people experiencing it each year.

The exhibit will cost $1,715,000, of which $1,365,000 is needed in cash and $350,000 is expected in in-kind donations. These funds will pay for the exhibit's development, design, fabrication, trailer construction, educational materials, promotion, six months of testing at The Computer Museum, and one year of travel across the United States.

As a traveling exhibition, Reality On Wheels: Worlds Built With Computers will be broadly promoted at each location it visits. Sponsors of this project will receive widespread recognition, including acknowledgment on signs placed prominently in the exhibit itself, in printed and promotional materials pertaining to the exhibit, and all press releases to the print and electronic media. Not only will sponsors be part of an important public education project, they will also be associated with the cutting-edge of computer science.



Sponsorship Opportunities

Reality On Wheels: Worlds Built With Computers provides a unique opportunity for corporate and individual sponsors to be associated with a highly visible traveling exhibition and to affect significantly the way the general public thinks about computers and computer-related technology. Benefits and privileges are designed to ensure that all sponsors and donors receive appropriate levels of recognition.

Presenting Sponsors ($500,000 to $750,000)

Prominent acknowledgement as the Presenting Sponsor ("Reality On Wheels: Worlds Built With Computers—Presented by [name]") in all published materials and communications regarding the exhibit including press releases, posters, gallery leaflets, and educational materials associated with the exhibit. The Presenting Sponsor will head in large typeface the list of supporters on credit panels placed prominently in the exhibition and will be granted rent-free use of the entire Museum for a function, an open house with free admission to all employees and their family members with discounts in the Museum Store, and 200 tickets to the exhibit opening. Presenting Sponsors will also have the opportunity to designate two locations for the exhibition to visit on its tour. The Presenting Sponsor will be featured in a story in the Museum's quarterly newsletter and also in The Museum's annual report.

Principal Sponsors ($250,000 to $499,000)

Prominent acknowledgement in all published materials and communications regarding the exhibit including press releases, posters, gallery leaflets, and educational materials for school groups. Sponsors in this category will follow the Presenting Sponsor on the list of supporters on credit panels placed prominently in the exhibition and will be granted rent-free use of the entire Museum for a function, an open house with 50% discount on admission to all employees and their family members with discounts in the Museum Store, and 100 tickets to the exhibit opening. Principal Sponsors will also have the opportunity to designate one location for the exhibition to visit on its tour.

Major Sponsors ($100,000 to $249,000)

Prominent acknowledgement in all published materials and communications regarding the exhibit. Sponsors in this category will follow Principal Sponsors on the list of supporters on credit panels placed prominently in the exhibition and will be granted rent-free use of the entire Museum for a function, an open house with 25% discount on admission to all employees and their family members with discounts in the Museum Store, and 50 tickets to the exhibit opening.

In-kind Support

Supporters providing in-kind donations of equipment or services will be acknowledged on a separate credit panel displayed in the exhibition gallery, in accordance with the significance of the contribution. Preference for in-kind donations will be given to cash sponsors. Please contact The Computer Museum Development Office for further information.

BUILT WITH COMPUTERS

REALITY

On Wheels

WORLDS

An Exhibit Proposal

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Introduction: An Exhibition On Virtual Reality

The Computer Museum is developing a unique traveling exhibition on virtual reality to give people across the country the opportunity to experience for themselves this exciting new way of using computers. The exhibition, entitled Reality On Wheels: Worlds Built With Computers, will open at the Museum in the spring of 1992 and will begin touring the country in the fall of the same year. The exhibit will cost $1,715,000, of which $1,365,000 is needed in cash and $350,000 is expected in in-kind donations. These funds will pay for the exhibit's development, design, fabrication, trailer construction, educational materials, promotion, six months of testing at The Computer Museum, and one year of travel across the United States.

Virtual reality is a new medium for communicating with computers, providing access to information using techniques that are closely coupled to the ways humans sense and interact with the world around them. People don equipment that gives them the illusion of being completely immersed in an environment created by computer. Such "virtual worlds" allow people to fly through city skylines, travel inside water molecules, and, like Alice in Wonderland, visit fantastic environments where they can defy physical laws. The potential of this new technology has made virtual reality the subject of much discussion, both in the field of computer science and the popular media. However, while many people have heard *about* this topic, there is no substitution for the *experience* of these digital worlds; Reality On Wheels: Worlds Built With Computers will give visitors of all ages and backgrounds direct access to this remarkable technology so that they hear, see, and feel virtual reality for themselves.

Virtual reality today is being used for purposes as varied as designing a building, studying the air flow inside a wind tunnel, and playing a simulated game of racquetball. In the future, virtual reality may allow students to take part in a simulated historic event, may be used by behavioral psychologists to help people overcome fearful situations, and may even project how a museum exhibition will look and work before it is built. Virtual reality, therefore, raises questions that concern not only those involved with the field of computer science, but also people from a variety of backgrounds and professions. What are the implications of creating virtual reality? Can it be addictive? How will it shape the way we work, play and think? Examining such issues will help visitors better understand the potential impact of virtual reality, and present the subject within a context that reaches beyond the immediacy of this new computer technology.

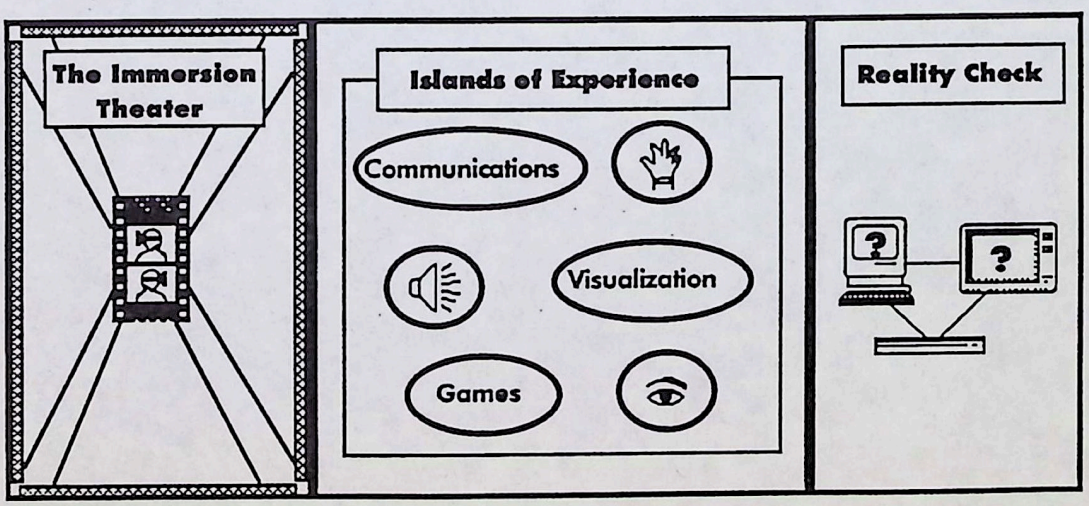
Reality On Wheels: Worlds Built With Computers will spend six months at The Computer Museum, where staff and outside experts will evaluate the exhibition before it begins to travel. The traveling exhibit is envisioned as being self-contained in an expandable trailer, visiting new sites every two weeks, including science centers, art museums and other locations with public access. Expected to travel for two years, the exhibition will have an estimated 80,000 people visiting it each year. For approximately fifty percent of the time at each location the exhibition will be open to the general public. The remainder of its stay will be set aside for school children from a variety of socioeconomic backgrounds to explore virtual reality in more depth, allowing them to create their own "virtual worlds." The exhibition will require three traveling staff members – an educator, a computer graphics artist-in-residence, and an engineer - in addition to an exhibit manager who will work from The Computer Museum, arranging visits as the exhibition travels across the country. Related products, such as publications, educational materials, and posters, will be marketed at the sites, extending the impact of the exhibition beyond the length of its stay.

Reality On Wheels: Worlds Built With Computers will be broadly promoted at each location it visits. Sponsors of this project will receive widespread recognition, including acknowledgment on signs placed prominently in the exhibit itself, in printed and promotional materials pertaining to the exhibit, and all press releases to the print and electronic media. Not only will sponsors be part of a unique and important public education project, they will also be associated with the cutting edge of computer science.

Exhibition Description

Reality On Wheels: Worlds Built With Computers will consist of three sections:

- *The Immersion Theater* - a multimedia presentation illustrating the background and components of virtual reality.
- *Islands Of Experience* - a showcase of the different systems currently in use to create virtual reality.
- *Reality Check* - a series of interactive videodiscs that raise issues related to the implications of this new technology and the challenges it presents.



Section I: The Immersion Theater - An Introduction To Virtual Reality

Visitors will begin Reality On Wheels by entering the Immersion Theater, a space with screens on all four walls. Drawing upon concepts from science fiction, such as Ray Bradbury's virtual living room in his story, "The Veldt," or the *Holodeck* in Star Trek, the theater will offer three-dimensional vision (visitors wear special glasses) and a surrounding environment, two components of virtual reality. Once the visitors are in the theater, they will remain in darkness for a few moments. Then, a panoramic view of mountains will surround them on all four walls. They hear the voices of a woman and man talking, the woman's voice coming from the back of the theater, the man's from the front.

"What a view!" says the man, whose back appears on the front screen.
"Yeah, I guess so," replies the woman, who appears on the back screen.
"Wait a second. We've climbed this mountain for five hours, trekked through mud, stones and who-knows-what, and all you can say is *you guess it's a good view*?"
"Well, it's not that I don't like the view. It's just that, well, it's not very alive."
"Not *alive*? Look over there," replies the man, pointing to a view of a large mass of dark clouds on the left wall, "See that storm in the distance? That's not alive?"
"Maybe alive is the wrong word. It's not, um, *interactive*."
"Interactive? Think about what would happen if I jumped off this mountain. You can bet I would interact with gravity."
"Yes, but I would rather fly."
"Fly? The thin air up here must have gotten to your head. Everyone knows you can't fly. Welcome to reality."
"You can if you're in a virtual reality."
"Virtual reality? What's that?" asks the man.
"This," she replies, and with the wave of her hand, she transforms the view into a computer graphics replica, a landscape made of simple polygon shapes. The man and woman also turn into computer-generated figures.
"What's this?" asks the man.
"A virtual reality. A simulation of the real landscape we were in."
"How did you do it?"
"Easy. With a computer."

This discussion will continue with the woman describing how computer graphics are used to create the simulated environment. But with this new technology you can do things which have never been done before:

"So, virtual reality is about helping you see things in more detail with a computer?" asks the man.
"Yes. But, it's much more than that. You see that waterfall over there," says the woman, pointing to a distant view on the right screen. "Let's fly over to it. Point your finger toward the waterfall, and use your thumb like a throttle." She points at the waterfall and moves toward it.

Standing next to the waterfall, the man says:

"That was fun, but this waterfall doesn't seem very real. If this was really a waterfall, I could feel the spray of water, taste it, smell it, hear it.."

"You can do all that in virtual reality too," replies the woman.
"You mean it's more than just pretty pictures?"
"Oh, yes. Virtual reality is about recreating as much of the real world as possible on a computer."
"How would you do that?"
"Well, the first thing you have to ask is: What *is* reality?"

The presentation will continue with a review of elements of the five different senses – including stereoscopic and peripheral vision, three-dimensional sound and tactile sensation – and how they combine to create our perception of reality. In each case, there will be an illustration of the efforts in the field of art or science to recreate the sensory perception. For instance, peripheral vision will be explained through a description of Panoramic Landscape painting, an early 19th century painting movement where large canvases were applied to the walls of circular rooms that people walked inside to view. Everywhere visitors turned, they had a view of the landscape, a feature that could be easily shown on the four walls of the Immersion Theater. In addition to exploring the elements of virtual reality, this review of the five senses helps people reflect on their own sense of reality.

Such examples show that virtual reality is the outcome of centuries of exploration in the arts and sciences. Virtual reality can best be described as a *convergence* of established concepts. It combines ideas from a wide range of disciplines, including literature, painting, film and video, as well as a variety of computer fields, such as artificial intelligence, computer graphics, human-computer interface, hypertext and multimedia. It is important that visitors see virtual reality as part of a continuum, built on a rich tradition of research and ideas from the past. This not only demystifies what the popular media have described as a fancy new technology; it also shows that virtual reality has a long way to go before reaching maturity.

The presentation will continue by taking visitors to the present. Some present-day applications of virtual reality - car design, urban planning, molecular design - will be shown. In addition, visitors will come to understand that virtual reality is not only about recreating reality. Indeed, what makes many virtual reality applications so compelling is that they allow you to do things you could never do in reality, such as flying through space, moving buildings in a city skyline, or holding microscopic objects. The message is that virtual reality is a new medium of communication, providing information in novel and intuitive ways.

The conclusion of the Immersion Theater presentation points our that virtual reality may even help us appreciate true reality a little more. The woman and man will be sitting together, their backs to the screen, looking over a computer graphics landscape.
"Nice view..." says the woman.
"Yeah, I guess so, " replies the man.
"You *guess*? I've just showed you how to fly and visit clouds. Try doing that in the real world."
"I know, but it's not real."
"It looks real."
"Yes. But it's all an illusion. Sometimes I just like good old-fashioned reality."

The man waves his hand, and the computer graphics landscape turns back into the photographic landscape.

Section II: Islands of Experience - A Showcase Of Virtual Reality Systems

Visitors will move from the *Immersion Theater* to the second and largest section of the exhibition, *Islands of Experience*, a showcase of different virtual reality applications and technologies. Here visitors will experience virtual reality for themselves to get a sense of how these systems are used in different disciplines. Visitors can explore the colorful experimentation taking place in the field, and the different approaches towards creating of "virtual realities." The Museum has surveyed a variety of virtual reality systems built by leaders in the field (see list of contributors, page 11) that could be included in the showcase. These systems, which reflect the wide range of ways people have applied this new technology, include the following:

• *Virtual Hide and Seek* - Known as *Reality Built for Two*. This application pairs two visitors in a virtual world, allowing them to interact not only with the virtual environment, but with each other. *Reality Built For Two* uses techniques and equipment that are part of many virtual systems, including a head-mounted display, sound localization and hand glove gestures.

• *Virtual Stage and Actors* - Known as VIDEOPLACE. Two users interact with each other in an electronic environment using a combination of video cameras, projection screens linked by computer technology. VIDEOPLACE involves one user using his or her entire body to communicate with an enlarged rear-screen projection of another user's hands. A unique quality of this system is that users do not need to wear any equipment in order to become involved in the alternative reality.

• *Virtual Travel Through The Human Body* - Allows visitors to explore the human anatomy by traveling around the skeleton and musculature. This will illustrate how scientists today are using virtual reality to visualize and come to grips with vast quantities of scientific data.

• *Virtual Body Language* - Using a computer and video camera, this application combines the live video image of one or more participants with interactive computer graphics. The result is that people see themselves on a television screen surrounded by a computer graphics world. They interact with this "world" by touching "hot spots" on the screen, creating sounds and animations.

• *Virtual Touch* - This system shows a range of textures on a computer screen which you can then "feel" with a joystick via a force feedback mechanism. Using this system, visitors can also "feel" varying effects of gravity.

• *Virtual Sports* - Virtual reality is, of course, a prime candidate for entertainment systems. Using hand glove gestures and a Nintendo system, this video game emulates the game of handball. This application, which uses equipment found in retail stores, is an excellent example of an affordable system that contains elements of virtual reality. While people may find that the large systems running virtual reality applications are not part of their everyday lives, many will be familiar with the Nintendo system.

As mentioned earlier, school groups will remain for an extended period in this area, building and exploring their own worlds. The computer graphics artist-in-residence and educator will help the children design their worlds using 3-dimensional computer-generated models. The hope is that these worlds will reflect aspects of the children's environment. The growing database of worlds created by children across the United States will eventually make a compelling environment in itself.

Section III: Reality Check

Visitors will move from *Islands of Experience* to the final section of the exhibition, *Reality Check*, a series of five learning stations employing interactive videos. This section will provide visitors with a space in which to reflect on what they have experienced and offer additional information to those who want to know more about virtual reality.

- *"How does virtual reality really work?"*

This learning station will review the different technologies to create virtual worlds, such as position sensors, head-mounted displays, and finger position-sensing gloves, and will provide visitors with a simple explanation of how each works.

- *"Who is using virtual reality?"*

While Reality On Wheels will showcase a variety of virtual reality systems, some applications will not, for reasons of cost and practicality, be part of the exhibition. This interactive will show how some people are using virtual reality in their work, such as in the design of molecules (using force feedback to sense the force acting upon the molecule) and in new kinds of flight simulators. Other systems presently under development will also be illustrated.

- *"What is the future of virtual reality?"*

This learning station will explore future applications of virtual reality. For example, the Human Interface Technology Laboratory at the University of Washington is developing laser microscanning, which directly projects computer images on the user's retina. Also included in this section will be simulations of the more outlandish suggestions – both good and bad - for virtual reality applications, such as virtual pets (*the forever kitten*).

- *"What is reality?"*

Experiencing virtual reality makes you question your own notions of reality. To encourage such reflection, this station will present visitors with different perspectives about the nature of reality, drawn from religious and secular traditions from around the globe. Visitors will be asked to think again about their own experience of reality, this time not necessarily from the point of view of their five senses (as is in the *Immersion Theater*), but from the larger perspective of their beliefs about the World.

- *"What do you think?"*

This interactive will give visitors the chance to voice their ideas about virtual reality in response to a variety of questions: "How would you use virtual reality in your work?" "Did you like being in a virtual world?" "Do you see any problems with virtual reality?" Their answers will be recorded by a camera on videotape, allowing them to contribute to the exhibition and creating a "souvenir" from each location the trailer visits. Another screen will play back messages from a previous location - i.e.: *"Today's messages are from people who visited us in Dover, Delaware."*

Exhibition Development

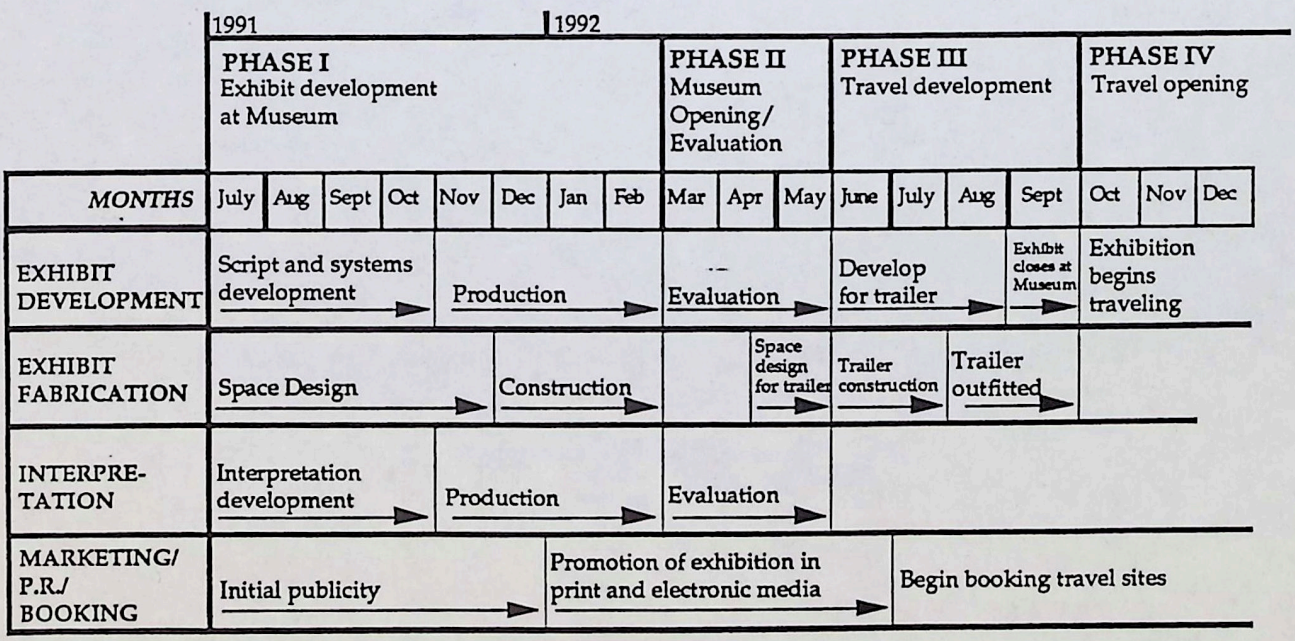
•Phase I (eight months): Once fundraising goals are reached, design and construction will begin on the exhibition test site at The Computer Museum. During this phase the major components of the traveling exhibition will be developed - *The Immersion Theater, Islands of Experience* and *Reality Check* - as will related education materials, brochures, signs and the method by which the exhibit will be evaluated. Design and production of the temporary test site exhibition (planned to remain open for six month) will be completed in eight month because research on the subject of virtual reality has already been completed and much of the moving image material is already available (The Museum has discussed using video material on virtual reality with The Point Foundation). Since the exhibition is planned as temporary, fabrication needs will be less than with permanent exhibits.

•Phase II (three months): Formative evaluation of the exhibit with visitors to The Computer Museum. Museum staff and outside experts will study and refine the exhibition before it begins to travel. They will concentrate specifically on equipment reliability, throughput and visitor satisfaction with the variety of virtual reality systems.

•Phase III (four months): Re-development of the traveling exhibition, incorporating the findings of the formative evaluation. The exhibition will remain open at The Computer Museum for three months during this phase, closing in the last month so that the major elements of the exhibition can be transferred to the expandable trailer.

•Phase IV : National Tour. The exhibition will be updated over time, with new hardware and software added as needed. Booking of the exhibition will take place at the Museum by the Exhibit Manager. Fees will be gathered at each site the exhibition visits, to be used to offset travel expenses and contribute to the development of future traveling exhibitions.

Project Timeline



ELEMENTS	COST	IN-KIND
MUSEUM STAFF	$175,000	$0
PROJECT PERSONNEL	$155,000	$50,000
CONTRACTORS	$28,000	$0
DEVELOPMENT EXPENSES	$14,000	$0
FABRICATION FOR ON-SITE	$24,000	$0
FABRICATION FOR TRAVEL	$232,000	$0
"IMMERSION THEATER"	$105,000	$15,000
"ISLANDS OF EXPERIENCE"	$185,000	$230,000
"REALITY CHECK"	$35,000	$25,000
GRAPHIC PRODUCTION	$14,000	$0
MARKETING &PROMOTION	$78,000	$0
PRINTING	$12,000	$5,000
TRAVEL EXPENSES	$110,000	$25,000
CONTINGENCY	$20,000	$0
MAINTENANCE RESERVE	$178,000	$0
PROJECT TOTAL	**$1,365,000**	**$350,000**

The Computer Museum

The Computer Museum was founded in 1982 as a public, non-profit institution dedicated to educating the public about computers and preserving computer history. It possesses the world's most comprehensive collection of computers and related technologies, as well as extensive film, video, and photo archives. Its over 21,000 square-feet of exhibits range from re-creations of early computer installations to displays of state-of-the-art computer graphics, artificial intelligence and the award-winning Walk-Through Computer.

Reality On Wheels: Worlds Built With Computers will be the third national traveling exhibition developed by the Museum, and is part of a four-year project to expand the scope of the Museum's audience and its outreach programs. This project will ensure that the Museum's exhibits remain on the cutting edge of computer and exhibition technology and that they appeal to an ever-broader audience.

The Museum's financial foundation is solid. Support from corporations, foundations, government agencies and members from around the world provide half of the Museum's operating budget. Admissions, Museum Store sales, facility rental and other earned revenue comprise the other fifty percent.

Reaching The Market

From the project's inception, the Museum's Directors of Marketing and Public Relations will convene an advisory committee to assist staff in the development and implementation of the marketing and public relations campaign for this exhibit. The campaign will make use of the Museum's established relationships with international print and electronic media. All publicity materials will recognize significant supporters of the exhibit. Publicity efforts for the Museum's newest major exhibit, The Walk-Through Computer, reached over 400 million people worldwide.

Currently, over 140,000 people visit the Museum each year. Overall, The Museum appeals to visitors of all ages, interests, and backgrounds.

Museum Staff

The following Museum staff will be involved in the project:

Dr. Oliver Strimpel (D. Phil., Oxford University) is the Museum's Executive Director. He will lead the project. Formerly with the Science Museum in London, Dr. Strimpel has created numerous exhibits related to computers, including *The Walk-Through Computer, The Computer and the Image* and *Smart Machines*, at The Computer Museum.

David Greschler, Exhibit Developer, (A.B., Brandeis University) was part of the team that developed the Museum's *Walk-Through Computer*. He has worked at the MIT Media Laboratory, has taught education software design at the Harvard Graduate School of Education, and is a recipient of the Thomas J. Watson Fellowship. He will develop the project.

Gregory Welch, Director of Exhibits, (A.B., History of Science, Harvard University) is the creator of several exhibits at the Museum, including *People and Computers: Milestones of a Revolution*, scheduled to open in June of 1991. He has consulted for Time-Life Books and the United States Information Agency in connection with computing history and technical exhibition projects and has studied the science and technology museums of Europe as a Shaw Fellow. He will oversee all aspects of the project's development.

Dr. Gwen Bell, the Museum's Founding President and Director of Collections (Ph.D., Clark University,), has guided development efforts for many of the Museum's exhibits. She has consulted extensively on the history of computers, including working with the Annals of the History of Computing, the SIGGRAPH Graphics History Project, and Time-Life Books. She will administer collections and fundraising aspects of the project.

Natalie Rusk (Ed. M., Harvard University, A.B., Brown University) is the Museum's Education Coordinator. She will be responsible for evaluating the exhibition and producing educational materials.

Janice Del Sesto, Director of Development and Public Relations (M.A., Rhode Island College, B.M., New England Conservatory of Music), will create and oversee the Museum publicity operations in conjunction with the exhibit, as well as plan the opening events and activities. She led the public relations campaign which gained over 400 million media impressions in *The Walk-Through Computer*. She will create and oversee the Museum publicity operations in conjunction with the exhibit, as well as plan the opening events and activities.

Gail Jennes, Senior Public Relations Manager (A.B. Wellesley College), has served as the New England Bureau Chief of a national magazine. She will implement the Museum's publicity campaign for the exhibit.

Advisors & Contributors

The Computer Museum has drawn together a distinguished group of consultants to advise on and contribute to the central themes, content, and technology of the exhibition:

John Barlow	Electronic Frontier Foundation, Cambridge, Massachusetts
Mark Bolas	Fake Space Labs, Menlo Park, California
William Bricken	The Human Interface Technology Laboratory, University of Washington
Meredith Bricken	The Human Interface Technology Laboratory, University of Washington
Scott Fisher	Telepresence Research, Los Altos Hills, California
Tom Furness	The Human Interface Technology Laboratory, University of Washington
Kathy Huffman	The Institute of Contemporary Art, Boston, Massachusetts
Bob Jacobson	The Human Interface Technology Laboratory, University of Washington
Mitchell Kapor	ON Technology, Inc., Cambridge, Massachusetts
Myron Krueger	Artificial Reality Corporation, Vernon, Connecticut
Jaron Lanier	VPL Research Inc., Redwood City, California
Brenda Laurel	Telepresence Research, Los Altos Hills, California
Ann McCormick	The Nueva School, Hillsborough, California
Margaret Minsky	MIT Media Laboratory, Cambridge, Massachusetts
Mike Naimark	independent, San Francisco, California
Howard Rheingold	Whole Earth Catalogue, Sausalito, California
Barry Ruff	TASC, Cambridge, Massachusetts
Randal Walser	Autodesk Research Laboratory, Sausalito, California
David Zeltzer	MIT Media Laboratory, Cambridge, Massachusetts